RADIOLUCENT SURGICAL TABLE WITH LOW SHADOW ACCESSORY INTERFACE PROFILE

Background of the Invention

1. Field of the Invention

The present invention relates to radiolucent surgical tables and, more particularly, to a radiolucent surgical table with a low radiographic shadow edge profile used to support a patient adjacent x-ray imaging devices such as C-arm scanners, CT, fluoroscopic, and other whole body scanners.

2. Description of the Prior Art

Conventional surgical tables include a flat patient support and a lower base for holding the patient support a predetermined distance from the floor. The base of conventional surgical tables commonly includes control apparatus for tilting the flat patient support through a range of orientations to facilitate performance of certain surgical procedures. Typical flat patient supports are made of surgical stainless steel and in most cases include a set of metal side rails supported along the edges of the table for holding surgical accessories, instrumentation, and the like. Typically, the side rails conform to an industry standard cross sectional size and configuration so that surgical accessories from any vendor source can be directly connected to surgical tables built by another vendor without modification of the attachment interface.

One disadvantage of stainless steel table tops of the type described above is that they block x-rays. Accordingly, their use in surgical or interventional procedures that require x-rays, fluoroscopic or other patient images to be taken are quite limited.

As a result, patient support tables have been proposed that utilize an x-ray translucent material, such as phenolic resins, in selected portions of the table top. The x-ray translucent material allows interoperative x-ray image signals to be generated using fluoroscopic devices, C-arm or CT scanners and other imaging equipment.

One such example of a prior art radiolucent table is shown at Figure 1. As illustrated in cross section, the flat patient support 10 includes a substantially planar table top member 12 formed of a x-ray translucent material such as, for example, a carbon fiber material or a phenolic resin such as sold under the tradename SPAULDITE. Due mainly to load carrying capacity limitations and to enhance stiffness, the table top 12 is supported on either side by a pair of longitudinally extending metal frame members 14, 16. Each of the metal frame members 14, 16 are attached to the bottom surface of the table top member 12 using a suitable cement such as an epoxy, fasteners, or the like. A pair of side rail members 18, 20 are held in a fixed relationship relative to the metal frame members 14, 16 as illustrated. The side rail members 18, 20 have a size and shape that conform to the industry-wide standards noted above.

One disadvantage of the flat patient support 10 illustrated in Figure 1 is that the metal frame members 14, 16 as well as the side rail members 18, 20 generate shadows when the patient support 10 is used in radiographic imaging procedures. As a result, only the portion of the radiopaque table top member 12 that is disposed between the pair of metal frame members 14, 16 is usable for radiographic imaging. This limitation becomes more pronounced when the table is tilted relative to the x-ray generator. The angle of the table relative to the x-ray source effectively shortens the distance between the metal side frame members

14, 16 as viewed from the x-ray source thus reducing the shadow-free areas in the radiographic image.

Figure 2 illustrates another prior art surgical table configuration that is somewhat useful in radiographic imaging and in certain interventional procedures. As shown there, a predominant feature of the flat patient support 22 is a relatively thick slab 24 of radiographic material having a generally rectangular cross section. The slab 24 is provided on opposite transverse edges 26, 28 with a substantially square accessory interface profile 30, 32 as shown. Each of the accessory interface profiles 30, 32 are sized and shaped to receive a pair of accessory coupler members 34, 36 on the opposite transverse edges 26, 28 of the radiolucent slab 24. In turn, each coupler member 34, 36 carries an industry standard side rail member 18, 20 of the type described above. In that way, most commercially available accessories can be used with the table.

One drawback to the "slab" type radiolucent surgical tables shown in Figure 2 is that the accessory coupler members 34, 36 are typically formed of metal and therefore obstruct x-ray signal propagation through portions of the table along the table edges. As a result, undesirable shadows are formed in the radiographic image.

Simple removal of the accessory coupler members 34 or 36 does not completely solve the shadow problem. The vertical surfaces along the square edges of the accessory interface profiles 30, 32 lead to shadows in radiographic images. The shadows are caused because, during normal use of the table, the vertical edges of the profile are typically aligned in a substantially parallel relationship with x-ray signal propagation. As a result, the edge surfaces tend to attenuate the x-ray signal to a substantial degree greater than the flat horizontal surfaces and, accordingly, the vertical edge surfaces generate shadows in the radiographic image.

It is, therefore, desirable to provide a radiolucent surgical table that presents a substantially uniform attenuation characteristic to x-ray signals in both

the lateral and transverse directions and with the table held flat or tilted relative to the x-ray signal source. In that way, the radiographic images of a patient disposed on such surgical table would be free and clear of extraneous shadows.

It is further desirable to provide such a table that, in addition to being substantially x-ray shadow free, provides a surgical accessory interface profile so that a wide range of surgical accessories can be easily and directly connected anywhere along the edge of the table top. Preferably, the accessory interface profile presents a substantially uniform attenuation characteristic to x-rays passing through the table top and table top edges regardless of the angle of the table top relative to the x-ray source.

Summary of the Invention

In accordance with the present invention, therefore, a shadow free radiolucent patient support table is provided including substantially planar top and bottom surfaces held apart in an opposed relationship. The radiolucent patient support table is preferably formed of an outer layer of carbon fibers surrounding an inner foam core. The outer longitudinal edges of the support table define a substantially continuous medical appliance support interface for selectively connecting a plurality of associated medical appliances to the table. The medical appliance support interface generally comprises a non-planar first connection area defined on the top surface of the surgical table and a second connection area defined on the side of the table top. The non-planar first connection area is shaped to provide first and second static supporting forces against an associated medical appliance, when connected to the table, in directions substantially parallel to and perpendicular with the top and bottom surfaces of the table. The second connection area is shaped to provide third and fourth static supporting forces against the associated medical appliance in third and fourth directions substantially parallel to and perpendicular with the top and bottom surfaces. The first and third forces cooperate to support a load moment generated

by the medical accessory held by the table edge. The second and fourth forces cooperate to support the medical accessory against gravity and in a vertical direction.

In accordance with one aspect of the invention, the non-planar first connection area includes a curved lip surface extending along the upper edge of the table top and at least one recess defined between a pair of wall surfaces that converge at a bight region of the at least one recess. The lip and recess are preferably formed as a continuous smoothly curved surfaces disposed along the outer longitudinal edges of the table top.

In accordance with yet another aspect of the invention, the second connection area includes a substantially planar surface held at an oblique angle relative to the substantially planar top and bottom surfaces. The planar surface of the second connection area forms an acute angle with the top surface of the table and forms an obtuse angle with the bottom surface of the table. In that way, the second connection area generates a static counter-force against the associated medical appliance connector in a downward direction relative to the table top so that a downwardly directed lip formed on the connector is forced into tight engagement with the at least one recess defined by the first connection area.

In accordance with a still further aspect of the present invention, a segmented medical appliance connector is provided for attaching a wide range of surgical accessories directly to the table top at selected positions along the interface profile. The connector includes movable upper and lower jaws that are adapted to clamp onto the interface profile.

In accordance with still yet a further aspect of the invention, a unitary appliance connector is provided for attaching surgical accessories to the table top. The unitary connector includes a resilient engagement area that is adapted to be press-fitted onto the interface profile of the table top. The unitary connector has no moving parts and therefore is easy to use and can be sterilized conveniently.

It is a primary object of the invention to provide a radiolucent surgical table that presents a substantially uniform attenuation characteristic over the entire surface area of the table top in both lateral and transverse table top directions with the table held flat or tilted relative to the x-ray source.

It is another object of the invention to provide such a table top that includes an accessory interface profile along the edge of the table top so that various surgical accessories, instruments, and the like can be quickly and easily attached to the radiolucent table as needed. The accessory interface edge profile presents a substantially uniform x-ray attenuation characteristic because it is formed without flat surfaces in alignment with the x-ray propagation direction. Essentially all of the surfaces of the interface edge profile are curved, rounded, or flat and disposed at oblique angles relative to the x-ray propagation direction.

It is another object of the invention to provide a radiolucent surgical table with a low shadow accessory interface profile that is convertible for use in a wide range of surgical and interventional procedures by providing a set of intermateable table top portions that are selectively arranged and fastened together into various configurations as needed. Preferably, the table top portions are connected using simple pin type attachment mechanisms.

It is yet another object of the invention to provide medical appliance connectors that are adapted to cooperate with the interface profile defined in the surgical table top to support various surgical devices and instruments relative to the table.

These and other objects and benefits of the present invention will be described below.

Brief Description of the Drawings

The invention may take physical form in certain parts and arrangements of parts, the preferred embodiments of which will be described in detail in this specification and

illustrated in the accompanying drawings which form a part hereof, and wherein:

FIGURE 1 is a cross-sectional view of a prior art radiolucent surgical table taken along a line (not shown) extending in a direction transverse to the table;

FIGURE 2 is a cross-sectional view of a prior art radiolucent surgical table taken along a line (not shown) extending in a direction transverse to the surgical table;

FIGURE 3 is an isometric view showing the subject radiographic surgical table in accordance with a first preferred embodiment supported on a mobile base;

FIGURE 4 is a cross-sectional view taken generally on line 4-4 of Figure 3 and showing a segmented medical accessory attached thereto;

FIGURES 5A-5C illustrate a sequence of steps for connecting a segmented medical accessory connector onto the radiolucent table top;

FIGURES 6A-6C show a sequence of steps for connecting a unitary medical appliance connector onto the subject radiolucent table top;

FIGURE 7 is an isometric view showing the subject radiolucent table in accordance with a second preferred embodiment; and,

FIGURE 8 is an isometric view showing the subject radiolucent medical surgical table supported by a vertical support column in accordance with a third preferred embodiment of the invention.

Detailed Description of the Preferred Embodiments

Referring now to the drawings wherein the showings are for the purposes of illustrating the preferred embodiments of the invention only and not for purposes of limiting same, Figure 3 illustrates a floor mounted surgical table **40** with a radiolucent patient support member **60** and medical appliance support interface **70** formed in accordance with a first preferred embodiment of the invention. The table **40** has a somewhat conventional base section including a base member **42** which is supported by four legs **44**, one leg

44 disposed at each corner of base member **42**. The legs **44** may be of the retractable type which can be withdrawn into the base member **42** to permit wheels (not shown) to contact floor **46** and enable hospital personnel to conveniently reposition the surgical table **40** within a room. A vertical support and positioning column **50** is secured on a first lower end to the base member **42**. The second or upper end of the column **50** supports the substantially planar radiolucent patient support member **60** in selected positions relative to the base member **42**. The column **50** preferably includes control mechanisms and operators well known in the art for tilting the control housing together with the radiolucent patient support member **60** into various orientations relative to the base member **42** to facilitate performance of a wide variety of surgical, interventional, and imaging procedures. A basic raise and lower function is provided within the column **50** to enable the patient support member **60** to be moved vertically relative to the base member **42** as shown in Figure 3 at arrow **V**. Additionally, a tilt function is provided within the column to enable the patient support member **60** to be pivoted relative to the base member **42**. In that way, the support member **60** can be moved into Trendelenburg positions as shown in Figure 3 at arrow **TR** and reverse-Trendelenburg positions as shown at arrow **RT**.

Still further, the upper end of the column **50** preferably includes a X-Y translation mechanism (not shown) for enabling sliding movement between the radiolucent patient support member **60** and the column **50**. A basic rail and bearing system of the type commonly used in industrial applications is preferably used. Systems of this type are available to provide smooth, accurate, and repeatable positioning between the respective members throughout the range of translation movement. In the present invention, longitudinal translation of the patient support member **60** in the direction **L** is provided relative to the column **50** over a range of travel of about twenty-four inches (24"). Transverse translation of the patient support member **60** in the direction **T** relative to the column **50** is provided over a range of

travel of about twelve inches (12"). Although x-y translation of the table **60** relative to the column **50** is preferred, in an alternative embodiment, the table is immovable in the x-y plane relative to the column **50**.

As shown in Figure 3, the radiolucent patient support member **60** of the first preferred embodiment is essentially formed as a monolithic single slab construction including a major body and leg support section **62** connected to the column **50** and a smaller headrest section **64** pivotally attached with the body and leg support section **62**. The sections are constructed of a foam core surrounded with outer layers of carbon fibers. Preferably, the headrest section **64** is selectively lockable in positions throughout a range of pivotal motion relative to the main body section **62**. This allows the patient's head to be supported in raised or lowered positions as desired.

With continued reference to Figure 3, the longitudinal edges of the radiolucent patient support member **60** form a medical appliance support interface **70** for selective connection of associated appliances to the table **40**.

Preferably, the support interface **70** is formed to extend continuously around each outer longitudinal and transverse edges of the support member **60** including the body and leg support section **62** and the headrest section **64** as shown best in Figure 3. A noted above, the support interface **70** adapts the outer edges of the surgical table **40** to selectively receive a wide variety of associated surgical accessory devices. Thus, by providing the support interface **70** along the outer edges of the table top in a manner as shown in Figure 3, the associated surgical appliances can be conveniently located anywhere along the sides of the surgical table **40** including positions on either side of a patient and adjacent the head and feet of the patient.

With continued reference to Figure 3, and with additional reference to Figure 4, the subject medical appliance support interface **70** includes a non-planar first connection area **72** defined on the top surface **74** of the

radiolucent patient support member **60**. In addition, the support interface **70** includes a second connection area **76** that is defined on the outer edge of the radiolucent patient support member **60** in a manner as shown. A non-planar third connection area **78** is defined at the bottom outer edge of the patient support member **60**. The first **72** and second **76** connection areas support an associated medical appliance **54** relative to the table against gravity and normal downward loading. The second **76** and third **78** connection areas support the medical appliance relative to the table against upward loading such as may be experienced when the appliance is a medical restraint or the like.

Figure 4 shows, in cross section, the preferred shape of the subject accessory interface **70** and the manner in which the interface is used to selectively connect various associated medical appliances **54** to the patient support member **60**. With particular reference now to that figure, the non-planar first connection area **72** is shaped to provide a first support force $\mathbf{F}_1$ against an associated medical appliance **54** in a first direction substantially parallel to the top and bottom surfaces **74, 80** of the patient support member **60**. Further, the first connection area **72** is shaped to provide a second supporting force $\mathbf{F}_2$ against the associated medical appliance **54** in a second direction substantially perpendicular to the top and bottom surfaces **74, 80**, respectively.

The second connection area **76** is defined generally on the edge of the patient support member **60** as shown to provide a third supporting force $\mathbf{F}_3$ against the associated medical appliance **54** in a third direction substantially parallel to the top and bottom surfaces **74, 80** of the support member. The second connection area **76** is formed to also provide a fourth supporting force $\mathbf{F}_4$ against the associated medical appliance **54** in a fourth direction substantially perpendicular to the top and bottom surfaces **74, 80**.

As can be seen from the figure, the first and second connection areas **72, 76** cooperate to support the medical appliance relative to the table against gravity and

normal downward loading. The static forces F_1-F_4 combine to provide the necessary resultant forces to support the associated medical appliance. The third connection area **78** is necessary only when upward loading is expected to be encountered.

Preferably, and in accordance with the present invention, the first connection area **72** includes at least one recess **82** defined between a pair of concave wall surfaces **84, 86** that converge at bight area **88** as shown. Essentially, the bight area **88** is formed in the valley between the pair of opposed concave wall surfaces **84, 86**. Preferably, the bight area **88** is a continuous rounded surface formed between the opposed concave wall surfaces **84, 86** as shown. This configuration enables x-ray signals to pass through the first connection area **72** of the support interface **70** along a transmission path substantially perpendicular to the top and bottom surfaces **74, 80** without encountering surfaces parallel with the transmission path. Surfaces parallel with the transmission path as well as surfaces that are close to parallel with the transmission path absorb the x-ray signal to a larger degree than surfaces which are oblique or perpendicular to the x-ray path. Accordingly, by forming the first connection area **72** without surfaces parallel or close to parallel with the x-ray transmission path, the first connection area **72** enables a substantially shadow-free image along the outer edge of the radiolucent patient support member **60**.

It is to be appreciated that the bight area **88** could include a flat surface between the opposed concave wall surfaces **84, 86** and parallel with the top and bottom surfaces **74, 80** of the support member **60** without adversely affecting x-ray signal propagation through the first connection area **72**. This enables an elongated first connection area if desired. In that case, the upward supporting force F_2 would be spread out over a larger (wider as viewed in the figure) surface area.

The outer wall surface **86** is somewhat shorter than the inner wall surface **84** relative to the top surface **74** of

the radiolucent patient support member **60** so that various medical accessories can be attached to the support member without extending above the plane defined by the top surface **74**. In that way, the upper portion of the medical accessory connector essentially forms a planar extension of the table top surface **74**. Alternatively, the outer wall surface **86** can be formed to be the same size as or larger than the inner wall surface **84** relative to the top surface **74** of the patient support member **60**. In those equivalent structures, the upper portion of the associated medical accessory connector would extend above the plane defined by the top surface **74** when the connector is disposed in the clamped-on position relative to the support interface **70**.

With continued reference to Figure 4, the outer wall surface **84** extends outwardly relative to the center of the patient support member to form a downwardly curved lip area **90** as shown. Preferably, in accordance with the present invention, the curved lip area **90** as well as the recess **82** are substantially circular in cross section and are curved to define a first radius **r**. The curved lip area as well as the recess are preferably formed without interruption or breaks along the entire outer longitudinal edges of the radiolucent patient support member **60** as best shown in Figure 3.

As is apparent from the cross sectional view of the patient support member **60** shown in Figure 4, the first connection area **72** provides a convenient surface for hanging medical devices and other equipment on the edge of the surgical table. In order to provide precise mechanical locating of the associated medical devices relative to the table top, the second connection area **76** is formed to define a substantially planar locating surface **100** that is preferably disposed at an angle oblique to the top and bottom surfaces **74, 80** of the support member **60**. Preferably, the locating surface **100** forms an angle of approximately 50 degrees relative to the top surface **74**. In this configuration, the locating surface **100** provides an undercut in the patient support member **60** that is advantageously used to multiply the load moment generated by the associated

medical accessory into a clamping force between the recess and curved lip area **82, 90** and a downwardly directed portion of a connector assembly fashioned to engage the recess and curved lip area.

In that regard and with attention now directed to the left portion of the cross sectional view shown in Figure 4, a segmented medical accessory connector **110** is illustrated in tight mechanical engagement with the medical appliance support interface **70**. As shown, the segmented connector **110** includes movable upper and lower jaw members **112, 114** that are carried on a main body portion **116** of the accessory connector. Preferably, in accordance with the present invention, the jaw members **112, 114** are pivotally connected to the main body portion **116** at a pivot joint **118**. In that way, the jaws can be opened so that the accessory connector can be selectively attached onto the medical appliance support interface **70**.

Figure 5A-5C illustrate the preferred manner in which the segmented medical accessory connector **110** is attached to the medical appliance support interface **70**. Turning now to those figures, the medical accessory connector **110** is first brought in general relative alignment with the medical appliance support interface **70** as shown best in Figure 5A. It is to be noted that preferably, the movable upper jaw member **112** includes a substantially planar top surface **120** that forms, in the connected position, an extension to the radiolucent patient support member **60** substantially within the plane of the top surface **74** thereof. Further, the movable upper jaw member **112** includes a downwardly projecting lip **122** and a curved concave surface **124** that defines a pocket **126** adapted to receive the curved lip area **90** of the support interface **70**. Lastly, the movable upper jaw member **112** includes a substantially planar upper engagement surface **128** that is coextensive with a lower engagement surface **130** defined by the lower jaw member **114** when the accessory connector **110** is disposed in a closed orientation as shown in Figure 5A.

Turning now to Figure 5B, the subject segmented medical accessory connector **110** is shown in its opened position whereat the upper and lower jaw members **112, 114** are rotated relative to the pivot connection **118** into the positions shown for ready attachment onto the medical appliance support interface **70**. The upper jaw member **112** is pivoted upwardly to an extent to enable the downwardly projecting lip **122** to pass freely over the curved lip area **90** of the support interface **70**. In a similar fashion, the lower movable jaw member **114** is pivoted downwardly to an extent to enable a hook region **132** of the lower jaw member to pass freely over a flared edge **134** of the third connection area **78** of the radiolucent patient support member **60**. Preferably, in accordance with the present invention, the movable upper and lower jaw members are biased into the closed position illustrated in Figures 5A and 5C and are brought into the opened orientation for ready attachment onto the support interface when the jaws are simultaneously held open by mechanical means such as by manual manipulation.

Figure 5C illustrates the segmented medical accessory connector **110** in its operative closed position and clamped onto the patient support member **60** via the appliance support interface in accordance with the present invention. As shown, the movable upper jaw member **112** is securely seated against the first and second connection areas **72, 76**. The movable lower jaw member **114** is similarly securely seated against the second and third connection areas **76, 78**. In that regard, the downwardly projecting lip **122** of the upper jaw member **112** is held in place within the recess **82** of the support interface **70** through engagement with the concave wall surfaces **84, 86**. Further, the pocket **126** formed on the underside of the upper jaw member **112** is securely held in place through mechanical engagement with the curved outer surface of the lip area **90** formed on the outer edge of the patient support member **60**. The upper and lower engagement surfaces **128, 130** are brought into planar engagement with the locating surface **100** formed as an undercut on the patient support member **60**. In that way, a downward force F_5 generated

by the associated medical appliance **54** attached to the accessory **110** generates a torque moment centered about the curved lip area **90**. The force of the torque moment is converted by the planar interface between the locating surface **100** and the upper and lower engagement areas **128, 130** into a downward force that is utilized to ensure snug engagement between the downwardly projecting lip **122** and pocket **126** of the upper jaw member **112** against the lip area and recess **90, 80** of the support interface.

Figures 6A-6C illustrate the subject medical appliance support interface **70** used in conjunction with a substantially unitary medical accessory connector **140** that can provide both upward and downward forces against the interface. As shown first in Figure 6A, the connector **140** is illustrated in operative position adjacent the support interface whereat a substantially planar top surface **142** of the accessory connector is brought into relative alignment with the top surface **74** of the support member **60**. Preferably, the top surface **142** is formed by the upper portion of an outer C-shaped frame member **144** that is adapted to carry a resilient deformable holding element **146** as shown. Preferably, as illustrated, the holding element **146** has an outer surface **150** that is shaped as the mirror image of the outer surface of the medical appliance support interface **70**. In that way, the unitary medical accessory connector **140** can be brought into intermated connection with the support interface **70** by simply pushing the accessory connector **140** onto the interface **70** against the force of the resilient deformable holding element **146** and into the position illustrated in Figure 6C.

Figure 6B illustrates the unitary medical accessory connector **140** midway between fully detached and attached positions. As illustrated, a downwardly projecting lip member **152** is compressed by the lip area **90** of the support interface **70**. Similarly, the lower hook region **154** of the deformable holding element **146** is compressed by the lower flared edge **134** of the support interface **70**. The unitary medical accessory connector **140** is brought into the final

connected position illustrated in Figure 6C by moving the connector relative to the patient support member **60** in the direction marked **P** in Figure 6B. The unitary connector is snap-fitted into place simply by using a force adequate to overcome the friction and compressive force on the resilient deformable holding element **146**. Preferably, the holding element **146** is formed of any suitable resilient elastomeric material such as a stiff rubber material or the like.

Similar to the above discussion in connection with the segmented medical accessory connector **110**, the unitary connector **140** illustrated in Figures 6A-6C includes a lower hook region **154** that is adapted to surroundingly engage the flared edge **134** of the third connection area **78** disposed at the lower outer edge of the support member **60**. The engagement between the hook region and the flared edge helps prevent detachment of the unitary medical accessory connector **140** from the support interface **70** when the medical appliance **54** attached thereto is subjected to an upward oriented disrupting force F_6.

Figure 7 is an isometric view showing the subject radiolucent table in accordance with a second preferred embodiment. As illustrated there, the table **40'** has a conventional base section including a base member **42'** and a vertical support and positioning column **50'**. The column **50'** is secured on a first lower end to the base member **42'** and preferably includes control mechanisms and operators well known in the art for tilting the control housing together with the radiolucent patient support member **60'** into various orientations relative to the base member **42'** to facilitate performance of a wide range of surgical, interventional, and imaging procedures. A base raise and lower function is provided within the column **50'** to enable the patient support member **60'** to be moved vertically relative to the base member **42'** as shown in Figure 7 at arrow **V'**. Additionally, tilt functions are provided within the column **50'** to enable the patient support member **60'** to be pivoted relative to the base member **42'** in Trendelenburg and reverse-Trendelenburg positions as shown at arrows **T'** and **RT'**, respectively.

Still further, the upper end of the column **50'** includes an x-y translation mechanism (not shown) for enabling sliding movement between the radiolucent patient support member **60'** and the column **50'**.

Of particular relevance to the second preferred embodiment of the invention, the radiolucent patient support member **60'** is segmented in a manner to facilitate a plurality of medical procedures which have heretofore required specialized tables for each procedure. In the embodiment illustrated in Figure 7, the patient support member **60'** includes a major body support section **62'** connected to the upper end of the column **50'** substantially as shown. A cardio-vascular extender member **66** includes a trapezoidal connection region **67** for interengagement with a correspondingly reverse-shaped trapezoidal region **63** provided in the body support section **62'**. The cardio-vascular extender member **66** and major body support section **62'** are selectively connected using suitable pin and lock type fasteners extending horizontally outwardly from the foam core at the trapezoidal connection edges.

In one preferred embodiment, the cardio-vascular extender member **66** has an overall length of about twenty inches (20"). This length together with a suitable attachment edge **68** for connection to a smaller headrest section **64'** pivotally attached to the extender member **66** enables a wide range of thoracic surgeries to be performed on a patient such as, for example, heart and lung operations.

In another embodiment, the cardio-vascular extender member **66** has an overall length of approximately twenty-two inches (22") for supporting the hips and legs of a patient lying upon the table in a "normal" orientation. The smaller headrest section **64'** is pivotally attached to the major body support section **62'** in a manner described above in connection with Figure 3. The second preferred embodiment illustrated in Figure 7 enables the use of a cardio-vascular extender member **66'** of selected lengths to be used to help facilitate certain surgical procedures. Furthermore, the second preferred embodiment illustrated in Figure 7 enables the

headrest section **64'** to be attached to either the major body support section **62'** or to the cardio-vascular extender member **66'** as desired.

Turning lastly now to Figure 8, the subject medical appliance support interface **70** is shown in conjunction with a radiolucent patient support member **60** that is supported by a vertical column member **170** extending between a ceiling and floor of a medical procedure room. In this embodiment, the patient support member **70** is connected to the vertical column **170** using a horizontally oriented support bar **172**. The support bar is vertically movable within the support column **170** to enable positioning of the support members **60** relative to the floor so that the height of the patient relative to equipment disposed on the floor can be easily modified. In addition, the horizontal support bar **172** preferably enables rotatable motion so that the patient support member can be tilted, inclined, or declined as necessary. Lastly, it is preferable that the patient support member **60** is attached to the horizontal support bar **172** using a rotatable connector so that the patient support member **60** can be rotated about an axis **L** for ease of patient access.

The invention has been described with reference to the preferred embodiments. Obviously, modifications and alterations will occur to others upon a reading and understanding of this specification. It is intended to include all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof.